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everywhere, and we feel sure that we voice the sentiment of all workers in this field when we say that the Kew authorities could not render a better and more highly appreciated service than the carrying out of such an undertaking.

NEW LOCALITIES FOR PERONOSPORA CUBENSIS, B. & C.

In the *Botanical Gazette* for August, 1889, and on page 201 of the present JOURNAL, attention is called to this fungus, the localities for its occurrence being given as Cuba, Japan, and New Jersey. We have recently received it from Anona, Fla., and College Station, Tex. At the former place, according to our correspondent, it appeared in the early part of December and destroyed a large number of cucumber plants growing in the open air in a few days. At College Station it also occurred upon *Cucumis sativa*, but no account of the injury it occasioned was furnished. That it was abundant there, however, is evident from the fact that our correspondent sent us more than 150 good specimens and did not seem to have any trouble in getting them.

REVIEWS OF RECENT LITERATURE.

BEUCKER, GEORGES. *Traitement du Mildiou*. Le Progrès Agricole, 4 août 1889; *ibid.*, 1^{er} septembre 1889.

These short reports coming from the French School of Agriculture recommend strongly to the use of viticulturists a fungicide which has hitherto not been used to any great extent in this country—verdigris, or basic copper acetate. In an experiment extending over three years this fungicide has proved to be, taking all its features into consideration, the most satisfactory among the copper compounds. The chemical itself being a mixture of the normal and bibasic acetates of copper is decomposed by the action of water, and the insoluble bibasic salt precipitated as a light jelly-like substance, which upon being sprayed upon the leaves dries and covers them with a hard horny layer. It is claimed for this solution, made by adding to 6 or 8 gallons of water at the ordinary temperature 2 to 4 pounds of the powdered verdigris and allowing it to stand twenty-four hours before diluting to 22 gallons, that it possesses in a much higher degree than the Bordeaux mixture the quality of adhesiveness, while lacking none of the latter's qualities as a preventive of mildew.

In the report of September the author answers many questions brought out by the former report of August in regard to the nature of the chemical and its proper application, giving in some detail a method for the home production of the basic acetate from the waste *marc*, or pumice of the grape, and small copper plates. The cost of the material is also carefully worked out, calculation being made for labor of

preparation by the home process. The conclusion reached shows a cost of only \$2.25 per acre when the verdigris is of home manufacture. The question of danger in its use is answered by reference to analyses made of grapes sprayed with the mixture, showing only an infinitesimal quantity present in the wine, and also to the medical works of Dr. Pécho-lier and Saint Pierre, which go so far as to say that when taken in small doses the acetate has a decidedly beneficial influence upon the human system.

From the inexpensiveness of the material, 20 to 30 cents per pound, when it is remembered that only 5 to 6 pounds are sufficient to spray one acre, the ease with which it may be prepared and applied and its decided efficiency, evinced by such a series of experiments as are contained in these reports of Mr. George Beucker, it seems worthy at least of a thorough trial among the vineyards of this country.—DAVID G. FAIRCHILD.

DIETEL, DR. PAUL. *Ueber Rostpilze, deren Teleutosporen kurz nach ihrer Reife keimen.* Botanisches Centralblatt, 1889, Nos. 18-20.

Dr. Dietel attacks the well-known Lepto and Micro sections of the genera of the *Uredineæ* and says no such division can be made either on a morphological or biological basis. He cites examples of species belonging to other sections whose teleutospores also germinate immediately after ripening. He recommends instead of the Lepto and Micro sections one section whose distinguishing character should be the formation of teleutospores unaccompanied by any other form, and that this should have two subsections with the same distinguishing characters that now mark the two main ones.

The species belonging to the Lepto-section of the *Uredineæ* are discussed according to their hosts, and in many cases the union of species generally considered as distinct is suggested; among these suggestions are the following:

Puccinia malvastri, Pk., is undoubtedly identical with *P. sherardiana*, Korn., and the latter name, being the older, should be adopted. The group of *Uromyces* attacking the *Malvaceæ* should probably be much reduced in number, but at least one true *Lepto-uromyces* must exist.

Puccinia mesnieriana, Thum. on *Rhamnus alaternus* in Portugal is identical with *P. digitata* on *R. croceus* from California.

P. saxifragæ, Schlecht., *P. curtipes*, Howe, and *P. striata*, Cke., are probably identical, and *P. saxifragæ* is a *Lepto-puccinia*.

P. chrysosplenii, Grev., *P. sprete*, Pk., and *P. congregata*, E. & H. differ only in minor points, so that it is impossible to consider these species with which *P. tiarella*, B. & C., and *P. heuchera*, Sch., should probably be included as strongly distinct from each other.

He considers *P. asteris* as the type of *Puccinia* on *Compositæ* and notes the following as agreeing with it more or less perfectly: *P. vomica*, *P. serratulæ*, *P. subsecta*, *P. Printzia*, *P. gerardii*, *P. xanthii*, *P. silphii*, and *P. grindeliæ*.